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DR. PAZ: My name is Dr. Jacob Paz. Just

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very briefly, my education. I have a PhD from Brooklyn

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Polytech. I was a research assistant professor, worked

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for EPA. I was -- I will submit everything in writing

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so you don't have to take this. I have several

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uncertainties which has been ignored and need

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additional research. My approach is based upon

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scientific data and scientific ethics. I don't take

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side. I work with both sides.

21

Number 1, we forgot that Yucca Mountain, in

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addition to the present nuclides, we have highly toxic

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carcinogens of chromium and nickel and potentially

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deuterium. There is a very good probability that Yucca

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Mountain Project could become a RCRA site and CERCLA

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site, because of the corrosion of heavy metals.

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EPA have very clear regulation which is

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prohibited present of RCRA site in seismic affected

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area. Why this was not addressed in the EIS and other?

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Second, in my opinion, I think, as a

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scientist what I, that Yucca Mountain, when I read the

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review of the absorption material by radionuclides,

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8 they missed one things. That we have a mixtures of
9 heavy metals, and a mixtures of radionuclides, and what
10 will happen what is absorption rate affinity
11 replacement and the rate of increasing of radionuclides
12 or heavy metals? It was not properly addressed. There
13 is potential of increasing risk to human health.

14 Furthermore, most of the study at Yucca
15 Mountain of the absorption has been done on a small
16 laboratory scale. Now to take this experiment to the
17 mountains, and to make a decision might introduce a
18 very serious error. You have to do verified it by
19 large columns field testing.

20 Another point which is caused me very great
21 concern is oxidation of manganese oxide -- I am sorry,
22 oxidation of chromium plus 6 which is highly
23 carcinogen. I read the EIS, I read the related
24 literature, and I have not found a very clear and
25 precise scientific evidence to address the issue of

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1 oxidation by manganese oxide, which is present in large
2 quantity in the Yucca Mountain. Only by additional
3 research it can be addressed and solve the issue. The
4 issue is very complex.

5 Another issue is why management have failed
6 to incorporate it, the Nevada test site risk assessment
7 of the 800 underground nuclear tests which has been
8 conducted of these -- at 259 tests were presumed to
9 have an impact on ground water, 112 were detonated in
10 the ground water. Recently, we have an increase in
11 awareness and questions about synergistic antagonism
12 interaction. The EPA has been published guidelines.
13 There has been called in the literature, and I have a
14 list many, it's included in Presidential Commission on
15 Risk Assessment in 1997. There is -- the National
16 Science Research Council, NCRP, they have called to do
17 this type of research and interaction between chemicals
18 and radionuclide, and what I'm seeing it's very
19 important, because if you take chromium and nickel
20 together, there is a publication of the EPA which has
21 been published, showing enhanced carcinogenicity. What
22 is the impact, interaction between those chemicals and
23 radionuclide is unknown. Despite my request for
24 funding from DOE, I was told it's somebody else. DOE
25 is responsible to site contamination.

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1 Second, there was a call for the President

2 and the Secretary DOE and many high official at YMP to
3 do this research I couldn't go through.

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4 Last, EPA has been published ground water as
5 a methods of treatment of the waste -- I'm sorry, with
6 the radioactivity in ground water. I think there is
7 an, is not compliance, because under RCRA disposal
8 restriction, you cannot do it. It's prohibited.
9 Question mark? Should be, it's a very clear
10 noncompliance.

11 In conclusion, their approval of Yucca
12 Mountain as a high nuclear repository should be based
13 only the best available science and technology. At
14 this point, there are several major scientific
15 deficiencies which must be addressed by additional
16 research. YMP must comply with all EPA standard and
17 regulation, and I like to throw a question for my
18 friend here, which state to me we're going to use the
19 best technology. Would he sponsor a research funding
20 on the complex mixtures? I'm willing, and I'm working,
21 I will provide the technical data if I will be funded.
22 Both sides, I am a scientist. I don't take position.

23 MODERATOR LAWSON: 30 seconds, please.

24 DR. PAZ: Finished.

25 MODERATOR LAWSON: Thank you.

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1 (APPLAUSE)

2 MODERATOR LAWSON: Can I ask you to leave

3 your comments?

4 DR. PAZ: I'll just leave a copy, because I

5 am going to submit it by writing very comprehensive.